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(54) Title: METHOD OF MEASURING PROTEIN-PROTEIN INTERACTIONS IN LIVING CELLS

(57) Abstract

A method of detecting protein–protein interactions in a living cell comprises (a) providing a cell that contains a first heterologous conjugate and a second heterologous conjugate, wherein the first heterologous conjugate comprises a first protein of interest conjugated to a detectable group, and wherein the second heterologous conjugate comprises a second protein of interest conjugated to a protein that specifically binds to an internal structure within the cell, and then (b) detecting the presence or absence of binding of the detectable group to the internal structure, the presence of the binding indicating that the first and second proteins of interest specifically bind to one another. Additional aspects of the invention include nucleic acids encoding fusion proteins as described above, cells containing and expressing such fusion proteins, kits useful for carrying out the methods described above, and nucleic acid libraries useful as screening tools for carrying out the methods described above. The invention is useful for screening compounds for the ability to disrupt or inhibit the binding of known binding pairs and thereby identifying competitive inhibitors thereof. The invention is useful for screening one known protein of interest against a library of other proteins of interest to identify compounds that bind to the known protein of interest.